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97	BRS	1	"5907850".PN.
98	BRS	1	"5918219".PN.
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100	BRS	1	"6021398".PN.

8pm  
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78	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/08/21 17:04		
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81	USPAT; EPO; JPO; DERWENT	2004/02/04 11:11		
82	USPAT; EPO; JPO; DERWENT	2004/02/04 11:12		
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84	USPAT	2004/02/04 11:13		
85	USPAT	2004/02/04 11:14		
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87	USPAT	2004/02/04 11:15		
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kwic times*

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*virtual showroom  
change parts*

7/9/52 (Item 14 from file: 148)  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
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08456699 SUPPLIER NUMBER: 17970683 (THIS IS THE FULL TEXT)  
Great American virtual home. (includes related articles)  
Professional Builder (1993), v61, n1, p166(4)  
Jan, 1996  
ISSN: 1072-0561 LANGUAGE: English RECORD TYPE: Fulltext; Abstract  
WORD COUNT: 2507 LINE COUNT: 00200

ABSTRACT: The 1996 National Assn. of Home Builders' Builders' Show in Houston, TX, will be highlighted by an especially-designed virtual reality display featuring a 3,500-sq.ft., four bedroom house. Developed by Mike Rosen and Assoc. for Trafalgar House Ltd., the display will showcase all the design features of the home design. It will allow viewers to **select** and preview specific rooms within the house.

TEXT:

During the "virtual" walkthrough of the "Great American Virtual Home," builders can examine many details of the home. For example, they can look at the unique elevations of the home, in which the MRA architects combined traditional building elements with contemporary detailing to create an elegant, cohesive architectural style. Builders can notice the maximized curb appeal, with a master suite expanding over the garage for a larger street presence.

Visitors approach the home and enter via a "virtual" Therma-Tru entry door.

The combination of the traditional plan with open spaces and long views through the house allows the house to be perceived as large and open. Architectural elements define each space and maintain its identity, such as stairs, columns, or cased openings.

Once inside, the split staircase gives builders the feeling of a back-stair home. There is a formal, sculptural incline from the foyer and a private, family entrance from the breakfast area. Before walking up the stairs, they can look through the large breakfast area and admire the views to the family room with a Heatilator fireplace as its focal point.

The kitchen includes the latest KitchenAid appliances including their newest dishwasher.

As visitors walk up the stairs, the second floor hall creates a dramatic sense of space, for it is open to the two-story family room and foyer. Visitors may **choose** to first walk through the grand entryway into the master suite.

They can stand in the large room, consisting of the sitting room and bedroom, and walk around the three-sided Heatilator fireplace that separates the two areas. Builders may also decide to check out the private views out the back of the home, through the windows in the bedroom and sitting room. They can walk into the master dressing and bath areas, which are separated from the bedroom, yet easily accessible.

Builders at the show can **choose** which room to visit, and in what order they want to visit them. They can even check out the York HVAC system. There is practically an unlimited number of possibilities when "virtually" walking through the "Great American Virtual Home."

Trafalgar House Residential New Jersey (THRNJ), which plans to build the home, is a division of Trafalgar House Property, Inc. Trafalgar House Property, Inc. is a subsidiary of British-based Trafalgar House, PLC. Since entering the American market in 1986, Trafalgar House Property, Inc. has experienced significant growth with successful operations throughout the Mid-Atlantic region; it now ranks as the nation's 35th largest homebuilder, according to Professional Builders' Giant 400. THRNJ, which manages Trafalgar's New Jersey and Pennsylvania operations, attributes part of its success to a well-timed focus on the move-up homebuyer, and also to a commitment to the tenets of relationship marketing. For developing innovative approaches to the marketing of new construction, THRNJ was

honored by the editors of Professional Builder with a 1994 Professional Achievement Award for Marketing Excellence.

Where is Virtual Reality Used?

Although commonly known as a form of entertainment, such as in video arcade games, VR is also being developed for many practical applications in the workforce. For example, Mike Rosen & Associates Architects recognizes the business opportunities in helping their builder clients by developing VR graphics and environments as an adjunct to their architectural business. Furthermore, the use of virtual reality is becoming prevalent in the training of professionals. With the use of VR, armed service pilots are trained to fly planes. Engineers design jets, automobiles and ships. Surgeons practice performing surgery. Technicians practice the repair and the decontamination of nuclear power plants. Builders show homes before construction.

Virtual reality applications will soon become a popular location for product placement. As virtual reality is used in more and more fields, and especially in many forms of entertainment, more products will be advertised in these virtual worlds. For example, product manufacturers will strive to attract the attention of young children by advertising their product name somewhere within a video game's virtual environment.

Further, virtual reality applications now have a presence on the **World Wide Web**, a portion of the **Internet**, due to the development of VRML (Virtual Reality Modeling Language). VRML is the computer language that enables interactive 3-D spaces to be placed on the Web. Virtual reality is more interesting than two-dimensional (2-D) graphics, therefore the VRML-created web sites are popularly visited. This is for two reasons.

First, a 2-D image is, in essence, a snapshot. With a flat, 2-D image, we can simply look at it, from one perspective. In a 3-D, interactive experience, we can manipulate the environment, move through it, and look at it from many perspectives.

Second, computers have become much more powerful in the display of 3-D environments than ever before. Home computers can display high-quality photorealistic graphics. So, instead of looking at an average, flat site on the Web, we **choose** to experiment with "virtual" Web sites, and see exactly what we can do there.

Applications of virtual reality are being developed for many areas of the **real estate** business. For example, VR can assist **real estate** brokers with the resale of homes; virtual reality walkthroughs are available through the **Internet**. New homes that are not yet built, too, are created in virtual space and put on the **Internet**. Potential buyers can download these homes and walk through them on their computers, using the 3-D navigational controls that appear at the bottom of the screen.

Before families relocate, they can make their home search easier by shopping for homes on the **Internet**. In the near future, creating 3-D "virtual" walkthroughs of homes will be necessary in order for home builders to keep a competitive edge in the **real estate** market. Potential relocating home-buyers will depend upon **Internet** virtual walkthroughs to find the home-builders in their future hometowns.

If builders do not show their homes on the **Internet**, they will miss the opportunity to reach many potential buyers.

VR applications of interactive home walkthroughs are now available for placement at **real estate** sales centers. When potential home-buyers visit a sales center to see brochures and speak to sales representatives about homes not yet built, they can actually "walk through" the homes, giving them a better perspective on design and dimensions. Buyers feel like they are actually in these homes.

Builders can save a great deal of money by showing their model homes in virtual reality. Instead of spending money to build four model homes, for example, they can build one and have three of them developed in virtual reality, for a fraction of the cost. Also, "virtual" show homes increase the number of pre-construction home sales, which greatly speeds the sales process.



The presence of virtual reality in **real estate** sales centers has dramatically increased the amount of traffic at these locations. One nationally-known eastern home-builder noted a 30% increase in traffic volume after advertising that one of their models would be shown in VR. Potential home-buyers are excited to be able to really experience how their new homes will look and feel, instead of simply using brochures that they may not fully understand. Also, they can actually see how things like furniture, colors, and appliances will look in a home, instead of having to try to visualize it. People who may not have originally thought about buying a new home are now visiting these sales centers - even if just to experience virtual reality.

Builders are not limited to the number of people who can experience their "virtual" model homes. This is because anyone can use VR; no prior computer experience is necessary. Virtual reality is extremely user-friendly.

Builders are not the only group in the industry that uses VR; manufacturers of building-related products also benefit from virtual reality technology.

For example, MRA/BSI developed a "Virtual Showroom" (TM) for Pella Windows at the AEC (Architects Engineers and Contractors) Systems '95 Conference in Atlanta. By using VR, shoppers walked through the showroom and admired the various windows on display. MRA/BSI also created a VR exhibit for a Canadian lumber and building supply chain for display in their booth at an industry trade show in Toronto.

Virtual  
Showroom for  
Windows

The corporate sponsors of the "Great American Virtual Home" Heatilator, KitchenAid, Therma-Tru, and York also have the opportunity to benefit from VR technology. Therma-Tru, for example, demonstrates several of the company's doors on the front of the home, which can be interchanged as part of the "Virtual Home" (sm) presentation. York Heating, too, uses the technology to demonstrate the efficiencies of its new heating system. KitchenAid is showcasing its latest appliances and Heatilator its fireplaces.

Swap out  
parts

Many builders like to spec model homes to work out the "bugs" before they build the real models. This is often a difficult process. Virtual reality will allow builders to evaluate a home with ease. Using VR, they can examine the design and circulation pattern prior to construction, as well as experiment with all other home features. Before a home is built, many people have difficulty visualizing the home from **floor plans** or 2-D Web sites. This is why it is becoming increasingly more common for interior merchandisers, too, to use virtual reality in the design of home interiors.

Jennifer Urdang, Director of Graphic Design and Communication at MRA, wrote this story. MRA modeled the home. The firm used computer hardware from Silicon Graphics, Inc., and software from Autodesk, Inc., Lightscape Technologies, and Division, Inc. Through an alliance with BSI, Silicon Graphics provides MRA with the world's fastest computer for constructing and displaying 3-D graphics in virtual reality. AutoCad, the program from Autodesk, translates 2-D images into 3-D spaces for use in virtual reality. Lightscape replicates realistic, natural lighting, which helps the VR developer at MRA create the most real-life appearances in virtual environments. Division, Inc. provides dVISE and dVS, programs with which one can add physical attributes (textures, colors, gravity and collision detection) to a 3-D space to make it appear realistic. dVISE and dVS also provide users with the capability of walking through a space in real time. In other words, the movement; happens instantaneously.

#### The Cost of Virtual Reality

Several elements affect the cost of developing a VR application. The level of detail within a model is a prime factor in cost determination.

Another major factor in determining the VR production cost is the degree of interaction of the VR application with the user.

The cost of developing a VR application ranges from \$2,500 for a basic, simple application to \$50,000 for a photorealistic, detailed application. For placement at a **real estate** sales center, the virtual reality equipment (computer, navigational device and HMD) can be

purchased or rented. Or, the builder may use his own computer in conjunction with a navigational device and HMD.

Architects look forward to eventually being able to design directly into virtual reality, instead of having to first design the house and then create a VR application. As Mike Rosen, President of MRA, described, "The architect of the future will be immersed in a space that he manipulates and designs on the fly. Home builders like Trafalgar House may build only one sample in a development, and use VR technology to show the other two models and **options**. They will give out digital brochures, on CD ROM or 3 1/2(inches) floppy disks, so potential home-buyers can experience housing communities from their home. The homes will be able to be pre-marketed - long before the first shovel is put into the ground."

#### RELATED ARTICLE:

The "Great American Virtual Home" is the result of a collaboration between Professional Builder magazine, Trafalgar House, and MRA/BSI. John W. Wilchek, Jr., and Mike Rosen founded BSI in January, 1995. BSI is a company devoted to providing creative virtual reality solutions and has the exclusive development and marketing rights for MRA VR designs. The team developed the "Virtual Home" in order to share, with builders from all over the world, the three firms' visions for virtual reality as the future of residential **real estate**.

#### RELATED ARTICLE: WHAT IS VIRTUAL REALITY?

Virtual reality is a technology with which users navigate through an interactive, immersive, three-dimensional environment. Users wear an HMD (Head-Mounted Device), consisting of a small video screen that covers their eyes and displays a three-dimensional (3-D) environment. The HMD simulates the wearer's perspective inside a virtual space. When they look upwards, the wearers see the ceiling, and they see the floor when looking down.

Inside a virtual reality environment, space movement is controlled with a navigational device, which is actually a mouse, joystick or spaceball that can be maneuvered in all directions. Users see themselves move in real time, in the direction which they move the navigational device. They can interact with objects and manipulate them.

#### RELATED ARTICLE:

##### NEW KITCHENAID DISHWASHER

Among the latest appliance in the virtual reality home kitchen is the KitchenAid dishwasher, which debuts at the show. The new dishwasher eliminates the need for pre-rinsing, feeds clean water to the upper arm so that wash water is always clean, and has special venting that reduces dishwasher noise.

##### HEATILATOR FIREPLACES

Heatilator is the first name in Fireplaces with the largest selection in both wood burning and natural gas burning styles. For more than 60 years, Heatilator has been an industry leader and was the first to offer direct-vent fireplaces. The peninsula fireplace, shown here and in the master bedroom, can be direct vented for ease of installation and operated by remote control.

##### THERMATRU ENTRY SYSTEM

Therma-Tru introduces the Classic-Craft entry system, the first composite door to look and feel like real wood. The door system has five times greater insulation value than wood doors and is guaranteed never to warp, split or crack. It accepts any color of wood stain and includes clear oak door jams, new glass lite styles and Therma-Tru's patented security strike plate.

##### YORK GAS HEATING & COOLING SYSTEM

The York Triathlon natural gas heating and cooling system provides economical heating and cooling, saving as much as 50 percent of the average cooling bill. These reliable systems have fewer moving parts than traditional electrically operated systems. The ammonia-based coolant uses no CFCs.

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SPECIAL FEATURES: illustration; photograph

INDUSTRY CODES/NAMES: CNST Construction and Materials

DESCRIPTORS: National Association of Home Builders of the United States--  
Exhibition; Virtual reality--Usage; Dwellings--Exhibitions  
PRODUCT/INDUSTRY NAMES: 1520000 (Residential Buildings); 3573260  
(Computer Input-Output Eqp NEC)  
SIC CODES: 1520 Residential Building Construction; 3577 Computer  
peripheral equipment, not elsewhere classified  
FILE SEGMENT: TI File 148

9/9/1 (Item 1 from file: 148)  
DIALOG(R) File 148:Gale Group Trade & Industry DB  
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09372587 SUPPLIER NUMBER: 19232806 (THIS IS THE FULL TEXT)  
Growth spurt. (**Wexford Homes**)  
Builder, v20, n2, p177(2)  
Feb, 1997  
ISSN: 0744-1193 LANGUAGE: English RECORD TYPE: Fulltext; Abstract  
WORD COUNT: 682 LINE COUNT: 00052

ABSTRACT: Semi-custom housing builder **Wexford Homes** of Ann Arbor, MI, has grown by 3,500% since 1992. This achievement has earned the company the 43rd place in 'Inc.' magazine's annual listing of the top 500 small companies. Owners William Collins and Craig Welch attribute their success to their ability to set limits offering customers a menu of choices but not unlimited choices. The company built 41 homes in 1996 and plans to build 57 in 1997.

TEXT:

Over the last five years, **Wexford Homes** of Ann Arbor, Mich., has had the kind of stratospheric growth many companies dream about: a total of 3,500 percent. In recognition of this achievement, Inc. magazine recently ranked the company 43rd on its annual list of the 500 fastest growing small companies in the country. Wexford is the only home builder on the list.

The company, which was founded in 1989 by William Collins and Craig Welch (two boyhood friends from the Ann Arbor area), builds semi-custom homes on optioned lots. The houses range from 2,000 to 3,250 square feet with an average selling price of \$315,000. In its first year, the company built a grand total of one house. Last year, it built 41; the goal for 1997 is 57. Total sales last year were about \$14 million; profit margins are in the mid-single digits.

Both Collins and Welch are 36 and have real estate backgrounds. Collins worked in real estate development for Little Caesar Enterprises, the pizza chain, while Welch is an attorney who specialized in real estate law. The two had been looking for a business to get into together for some time, and the red-hot housing market of the late-'80s seemed the best opportunity. Since then, the company has grown to include about 20 full-time employees.

Play safe. So how do you manage that kind of rocket-powered growth without blowing a fuse and winding up back on the launching pad? "You have to play within your limitations and not try to be everything to everybody," says Welch. "And you have to learn to say no."

Wexford offers its customers 10 different floor plans, each with three elevations. Customers also choose from a menu of options. "There are choices but not unlimited choices," says Collins. "We've already decided what they're going to be and priced them out. The result is we can use production methods to build semi-custom homes."

Design smarts. Design has been crucial to the company's success. "They really do their homework," says Bob Murray, owner of Murray Builders in Ann Arbor and former president of the Washtenaw County HBA. "They're very market-specific and development-specific. What they build on the south side of Ann Arbor is different than what they build on the northeast side."

"The days when a builder could build the same house for 10 years are gone," says Welch. "Two years ago, when our business was really starting to take off, we had something that was new for this area and very exciting. Now, you see it all over the place."

The company uses subs for all phases of construction and each house takes five and a half to six months to build. Cash flow remains a challenge. "A growing business needs more and more cash," Collins says. "We were very thinly capitalized in the beginning - I think we had \$30,000. We got by by not taking any money out of the business in the way of profits or

salaries for the first few years. We're still very frugal about expenses. I never assume we've made it. I always operate under the assumption that we're fighting for survival."

Grow and change. Looking ahead, the partners think 60 houses a year is probably the limit, given the nature of the semi-custom business. However, they see opportunities in a company they have founded with a third builder, John Shekerjian of John Richards Homes in Birmingham, Mich. The new company is called John Richards **Wexford Homes** and specializes in starter homes and other production-oriented projects. They recently began a development called The Ravines, which will take about two years to build out and will consist of 145 homes. The price range is \$140,000 to \$180,000.

"It's probably the cheapest price possible for a new single-family home in this area," says Welch.

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7/9/12 (Item 12 from file: 15)  
DIALOG(R) File 15:ABI/Inform(R)  
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Seeing the sites

Buchanan, Leigh

Inc. v19n15 (Inc 500 Supplement) PP: 134-141 1997 CODEN: INCCDU ISSN:

0162-8968 JRNL CODE: INO

DOC TYPE: Journal article LANGUAGE: English LENGTH: 4 Pages

WORD COUNT: 2691

ABSTRACT: A tour of the Inc. 500's Web sites is presented. After visiting 118 sites in 22 days, what strikes one is the homogeneity of the sites. More disturbing than many sites' humdrumness was their apparent lack of any good reason to exist at all. Many companies have thrown up placeholders in cyberspace with no visible strategy for extending or enhancing their businesses there. There is no effort to engage, let alone serve, customers.

TEXT: Headnote:

How I visited 118 less-than-state-of-the-art Web sites in 22 days on a T1 line at peak user periods and didn't even get a lousy T-shirt

MY FATHER LIKES TO BOAST that he once viewed the entire contents of the Louvre in three and a half hours. He would have done it in three, but they'd just brought up 80 paintings from the basement, and that set him back a bit.

I embarked upon my tour of the Inc. 500's Web sites with a similar mind-set. Confronted with 277 sites and a deadline, I worried mostly about covering acreage. The distinctiveness of the sites, I assumed, would prevent them from dissolving into a meaningless blur of buttons and frames. My plan was to compose from pixels of individual excellence a snapshot of the current state of the small-business Web.

Well, that didn't happen. After eyeballing some 118 sites (no, I didn't get to all 277; try it yourself before you do any stone casting), what struck me most was their homogeneity. Here we had companies representing the fast-growth creme de la creme, many with charismatic leaders, dramatic birth legends, idiosyncratic cultures... and Web sites that looked as though they had sprung fully formed from the same generic marketing group.

More disturbing than many sites' humdrumness, however, was their apparent lack of any good reason to exist at all. It's not just that few companies are selling over the Net. The problem is that so many companies have simply thrown up placeholders in cyberspace, with no visible strategy for extending or enhancing their businesses there. There is no effort to engage, let alone serve, customers. No exploitation of the media beyond the most elementary navigational tools. No deepening or customizing of information so that visitors can learn more than they would from a print ad or a brochure.

But before I launch into individual critiques, a couple of qualifiers. First, most of these sites are new. One of them may prove to be the next [www.cisco.com](http://www.cisco.com) and is just unrecognizable as such while it's still in short pants. Second, Web sites change every day. By the time this article appears, the sites mentioned may bear no resemblance to their descriptions here. In fact, many may now look oh-so-smart, leaving me with my mug covered in albumen. Finally, some companies may argue that there's no point expending significant time and money on some thing that may not produce results. Possibly. But I say that if a thing is worth doing.. well, go ask your moms.

W

View behind's  
options  
over web

## 'Tis Better to Have Tried and Socked

Failure on the Web comes in many forms: some failures are noble but most are simply drab and un compelling. There is, for example, a serious failure of ambition at the site of **Select Comfort** (#82) which, I'm guessing, largely duplicates the mattress maker's print advertising. The entire site consists of three pages of infomercialesque prose ("Do you toss and turn at night?") and three uninspired graphics. The company offers brief descriptions of its three styles but no pictures. And since prices range from \$299.99 to \$1,789.99, a chart giving customers some idea of what it costs to get a good night's sleep would be a help.

I certainly hope visitors to the site are ordering **Select Comfort's** free video. (I would cheerfully have watched it myself had it been **on-line**.) Oddly enough, considering the company's devotion to recruiting (see "The Right Fit," page 104), **Select Comfort** doesn't look for employees via cyberspace. To its credit, the company does make an effort to collect customer data, a smart tactic that may lead to more customized delivery in the future. Overall, though, the site is a snore.

By comparison, **Enviro-Check's** site is a thing of beauty and a joy forever. The company (#268), which specializes in water conservation, uses an elegant water motif in its graphics and icons, and the design and color scheme are unusually attractive. But when I visited, the site was a graveyard of dead links. (Customer Data Center: dead. Employee Data Center: dead. Customer **Online** Support: dead.) Presumably, **Enviro-Check** has big plans for its site, including the kinds of customer service that make a Web habitue's heart go pitter-pat. But with no on-site explanation of what's in store, the thing comes across as a ghost town. All that's missing are the Java-ized tumbleweeds.

Of course, Web sites for some industries are like toy giveaways for fast-food joints. They're so de rigueur that you don't score a lot of points for having one. **Fugazy Executive Travel** (#340), for example, is a perfectly serviceable-if visually unexciting-site, where you can make reservations on the Web (using Sabre) or via Email, calculate currency, and do other **on-line** travel tricks. But the company is so clearly technology-intensive that I wonder why such fax-based services as seat mapping and itinerary generation aren't also available. The **Travel Encyclopedia** is a nice idea but is full of dead links: practically the entire frequent-flier-club section is missing in action. And even as a hard-core East Coaster, I can't quite convince myself how a site offering city information can mention only New York and Boston and then head home for the day. Since **Fugazy's** customers are corporations that buy travel services long term, it probably doesn't need to offer the scope and panache of **Rosenbluth International's** very fine **Travelution**, or of Web-only companies such as **Travelocity**. Still, travel is one industry that is becoming rapidly-and skillfully-Webbified. **Fugazy** is very close, but the cigar lacketh.

The Patty Duke Syndrome

My complaint that many of the Inc. 500's Web sites look alike may not be entirely fair. After all, more than three-quarters of those companies with an **Internet** presence deal-directly or indirectly with computer-related products or services. Still, experienced en masse, these sites take on the quality of a newspaper personals section, with entry after entry offering the business equivalents of beach strolling, fireplaces, and sunsets. All those uninspired mission statements. All those sterile product descriptions. All those globes.

Not that there's anything inherently wrong with the "This is our company, these are our products, here's what our customers say, and wouldn't you like to come work for us?" format. But the Web offers companies an opportunity to be a little more personal, a little more forthcoming, a

little more creative than they might be in traditional marketing or transactional media. And few of these sites take advantage of that.

It doesn't take much to convey character on-line. CableLink (#98), a supplier of cable to resellers and OEMs (original equipment manufacturers), does it with employee-information pages that showcase not only the company's marquee tides but also everyone from Custom Department Technician Chris Stevenson ("the world's BIGGEST Mech Warrior fan") to Jeremy, who's only part-time until he goes back to college next semester. But-hmm-those descriptive blurbs appear under every employee's photo except for those of upper management. (OK, chief financial officer Mark Berret is labeled "The Money Man.") If chief executive Ben Chase and his father, vice-president Mike Chase, really want CableLink to be perceived as one big happy family, they oughta come across with some irrelevant detail about themselves, same as everybody else.

Some sites are born with personality; others have personality thrust upon them. The latter is happening at the Revere Group (#57), a consultancy whose site labors under a dance theme that has even less to do with information technology than one might think. The company's strengths are described in terms of dance ("Just as the athletic jitterbugger must first learn basic footwork, effective systems design requires an understanding of technology capabilities and business trends"), and these blurbs are accompanied by illustrations and brief histories of various dance styles. (The Apollo Palace, in Vienna, apparently used to set aside a special room in which pregnant women could waltz.) I applaud Revere's effort to break out of the mold with an unexpected graphic and stylistic conceit. But I find myself paying more attention to how poorly the metaphor works than to how well the company does.

Design Toscano's site has both looks and personality, although that's to be expected. After all, the gargoyles, suits of armor, cherubs, and other historical reproductions that the company (#233) sells make for more impressive visuals than, say, computer cables do. Still, by any standard this is a stunning site. The shimmering water effect that greets visitors (the image is of a couple of stone cherubs resting serenely by a pond) is a major screen-saver opportunity. The home page bears the notice "Warning: Protected by Gargoyles." Since the company is using an unsecured server, its transactions aren't protected by much else.

#### Respect the Unexpected

The Web sites that really float my boat are those doing unexpected things in who'd-a-thunk-it industries. For example, it's because the corporate-facility-construction business doesn't seem rich with on-line business opportunities that DPR Construction Inc. (#412) gets three huzzahs for the Project Collaboration Center portion of its site. Behind the whimsical "Admit One" icon resides a passwordprotected area where-in the very near future-the company will handle all aspects of project management for the majority of its clients. The idea is to give a project's participants-customers, architects, engineers, subcontractors, and even licensing agencies-access to their own segment of the site, where they can pass around drawings, estimates, schedules, and all things related to work flow. Another neat idea: when some problem arises at a construction site ("What's this steel beam doing in the air vent?"), workers can simply post a digital photo to get their question answered. From the looks of it, the company also plans to let subcontractors bid on-line.

Much as it pains me to use a word like savvy, I'm afraid I have to when describing the Web efforts of Jaffe Associates (#411), a marketer for legal and financial firms. Jaffe knows exactly what it's doing, and it does it really well. In addition to a nicely designed gallery of promotional campaigns for clients and a collection of nonobvious marketing tips that's updated religiously, the site offers a free Web and E-mail news service for journalists who want legal commentary on topical issues. There's also a



wonderful article by a Jaffe staffer explaining how the company uses on-line newspapers and E-mail to splash its clients' names all over the media whenever a big story breaks. Jaffe clearly knows that there's more to working the Internet than just fielding a Web site. That's what makes it so...savvy.

Sure, They're Obvious. So What?

Some companies-particularly those that deal in information-are simply better positioned than others to exploit an online presence. The staffing companies on the Inc. 500, for example, are doing a swell job of that and could probably become wholly virtual in time. One of the companies with the best sites, Staffing Edge (#17), offers most of its services interactively, including job and job-candidate hunting via an extensive database that's searchable by both occupation and geography. The company also gives applicants the option of building a resume on-line or pasting in their own, and there's a section of job-related resources (all of them books-a missed opportunity to provide Web links). I also liked Amicus Legal Staffing's site (#99), which caters to legal types and guides users through the creation of a profession-specific resume. (Ever been disbarred? Amicus demands you fess up.) Key Resources (#319), meanwhile, is doing the pushtechnology thing-automatically delivering relevant information to interested users-with a dynamically generated mailing list for people seeking technical positions. Such services are potentially of very high value to customers, particularly those whose job searches aren't limited by geography.

Software companies ought to be the most usual of usual suspects when it comes to interactivity, so it's disheartening that only a smattering of the Inc. 500 sites in this category offer downloadable demos. One site that does a nice job of it is High Technology Solutions (#44). HTS is happy to let potential customers take its Internet Focus software for a spin, but it would like a little something in return. That something is information, including what kinds of computers and operating systems you have and whether you've ever had reason to limit employee access to the Internet. There are also separate forms for asking questions, reporting bugs, and submitting a "wish list" for future versions. None of this is fancy, but it's a smart way to collect good customer data without ticking anybody off.

Computer distributor Support Net (#54), meanwhile, is eyeing some serious business-to-business opportunities, which, unfortunately, an irritating JavaScript error prevented me from fully appreciating. Affiliates can order products, check backlogs, and review configurations through the site. A feature called Inventory On-Line is essentially a window into the company's warehouse, where users can browse the shelves for items as trivial as modems or as substantial as RS/6000s and get immediate availability updates. There's also a fairly impressive IBM/affiliate database and very neat, this-a lead-management system for tracking prospects and contacts. This is the kind of stuff that makes sites like Dell's and Cisco's swoon-worthy. I only hope Support Net is doing its darnedest to nudge existing customers on-line.

Printers can be flighty creatures, and there are apparently hundreds of people out there anxious to request Laser Pros International's (#88) help in calming them. Not all the posted questions are answered on-site, and it's not clear whether tech support is replying privately or just falling behind. But E-mail links are embedded in each query, making it possible for users to answer one another's questions, the best of all possible worlds. Some kind of search tool or indexer would be useful so users could quickly sort through existing queries before posting a new one, in case their problem has already been addressed.

Real estate is another industry that has been quick to exploit the Web, and T.H. Properties (#7) has clambered aboard the bandwagon with a

site that, while not especially interactive, is a good alternative to tootling around Pennsylvania checking out all the company's developments. No one's going to buy a home over the Web-not yet, anywaybut T.H. Properties' site gives customers a fair idea of whether they might like to live in Rosecliff Manor and, if so, whether a home in the Montreal, the Sudbury, or the Regina collections might be their cup of tea. Click on the "Communities" icon to find out about the company's developments. Kingscote, for example, priced from the upper \$180s, is located in Franconia Township and has trees and rolling meadows. The photos show it full of construction machinery. Click on the "Homes & Floorplans " icon to see what individual models will look like when the construction machinery goes away. Click on "Standard Features" to see what you get (Kohler plumbing fixtures) and on "Customizing Options" to see what you might want (a six-foot Wenco Slider instead of a twin window). Lots of pictures, lots of maps, lots of people wearing tuxedos.

Builders  
options

Technical-training companies also are among the clued-in, presumably because their customers spend a chunk of their lives in front of computers. Empower Trainers & Consultants (#47), for example, is smart to offer specials available only over the Web (50% off classes purchased through the site's Technical Training Store). But ARIS Corp. (#214) is even smarter. The company has created an on-line campus for Microsoft certification. Students interact with one another and with their professors via E-mail, bulletin boards, audio and video sessions, and shared applications. There are real-time discussion sessions, classspecific newsgroups, and interactive quizzes and exams.

Applications like the ARIS campus, which is both well conceived and well executed, prompt the question among business owners: Why aren't we doing something like this? If you find yourself asking that question about a site, and you can't come up with an answer, that's the strongest possible evidence of the offering's value and viability.

Sidebar:

The Sites

Sidebar:

Amicus Legal Staffing: [www.amicus-staffing.com](http://www.amicus-staffing.com) ARIS: [www.aris.com](http://www.aris.com) CableLink: [www.cablelink.com](http://www.cablelink.com) Design Toscano: [www.aaweb.com/toscano](http://www.aaweb.com/toscano) DPR Construction: [www.dprinc.com](http://www.dprinc.com) Empower Trainers & Consultants: [www.empower.com](http://www.empower.com)

Enviro-Check: [www.envirochk.com](http://www.envirochk.com) Fugazy Executive Travel: [www.fetusa.com](http://www.fetusa.com)

Sidebar:

High Technology Solutions: [www.htshq.com](http://www.htshq.com)

Jaffe Associates: [www.jaffemktg.com](http://www.jaffemktg.com)

Key Resources: [www.keyresources.com](http://www.keyresources.com)

Laser Pros International: [www.laserpros.com](http://www.laserpros.com)

The Revere Group: [www.reveregroup.com](http://www.reveregroup.com)

Select Comfort: [www.comfort.com](http://www.comfort.com)

Staffing Edge: [www.staffingedge.com](http://www.staffingedge.com)

Support Net: [www.supnet.com](http://www.supnet.com)

T.H. Properties: [www.thproperties.com](http://www.thproperties.com)

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Comp sys  
options  
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07660381 SUPPLIER NUMBER: 16359337 (THIS IS THE FULL TEXT)  
John Murtagh. (Longford Homes of Nevada president) (Builder's  
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Builder, v18, n1, p322(2)  
Jan, 1995  
ISSN: 0744-1193 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 1394 LINE COUNT: 00103

ABSTRACT: Longford Homes of Nevada has positioned itself as one of the major semi-custom home builders in Las Vegas, NV, with a total gross revenue of \$36 million in 1994. Longford Homes Pres. John Murtagh founded the company in 1991 and quickly capitalized on an emerging niche market for low-end custom-built homes. Murtagh credited the company's success to its efficient and hard-working employees.

TEXT:

PRESTO CHANGO

Before breaking ground on his company's first project in August 1992 John Murtagh had 80 sales in the books. Selling out of a storefront office with two computers, Longford Homes of Nevada offered Las Vegas buyers the opportunity to customize entry-level houses starting at \$79,990. The 191-unit project sold out in 15 months.

The company's second project, Longford at Sunrise, opened in January 1993. Once again offering significant customization on houses ranging in price from \$77,990 to \$103,990, Longford has sold more than 180 of the 350 houses in the community. Taking advantage of its market success, the company opened six more projects in Las Vegas, ranging from 72 houses to 550 houses; the 72-unit patio home project sold out in 11 months.

In only three years, Longford Homes has climbed to be among the leaders of the Las Vegas housing market. After closing 36 houses and grossing \$3.7 million in 1992, the company's volume leaped to 250 closings and \$26 million in 1993. In 1994, the growth slowed only slightly, as Longford closed 350 houses and grossed \$36 million.

"We've hit a niche in the market that other builders have ignored or can't do," says Murtagh. "And we think there's still a lot of potential for growth here."

IMPRESSED WITH RESUME

Murtagh learned home building from the best. An engineer, he started with Centex doing land development. "I was approving 1,400 lots a year," he says. "Most builders never see that." He moved on to K. Hovnanian Enterprises, serving as construction vice president. "During my time there, the company went from 250 units a year to 1,200," he says. "I learned how to control costs in the middle of fast growth."

Next came Toll Brothers, where he was a division vice president and learned "how to buy, how to manage, and how to negotiate." In 1988, he left Toll to head up Coleman Homes' Las Vegas division, and he quickly realized the possibilities of the Las Vegas market.

"I think the goal of anyone in the home building business is to own their own company," he says. He left Coleman in August 1991, and started Longford Homes.

The key element in Murtagh's starting up Longford Homes was securing financing through three private investors in Hawaii. "Las Vegas is a network town," says Murtagh, who met his investors through a friend of a friend of a friend. "They were impressed with my resume and we were blessed with a strong housing market. They were taking a risk, but not like they would have in most parts of the country."

The investors fund 100 percent of Longford's acquisition, development, and construction needs.

"The only money out of our pockets is for marketing and half the interest expense," says Murtagh, who also has a \$1 million corporate line

of credit with the investors. "They fund the other half." in return, the investors are trustees in the properties, so they are protected, and they earn a 35 percent annual internal rate of return on their investment.

#### CLICK ON AN OPTION

In starting up his company, Murtagh saw the opportunity for a semi-custom builder in the low end of the Las Vegas market. To succeed, however, he needed a tool to manage the customization. He found it in the Vision Space Planning system, which is a customer-oriented CAD system designed by Steven Ormande.

"The system shows actual elevations in 3-D," says Murtagh, who paid about \$15,000 for it, including hardware. "Prospects walk in and look at our selection of 25 basic floor plans. They can click on a plan and the system shows them the plan and all the **options** available. When they click on an option, the floor plan changes to reflect that. When they have made all their changes, they go to the salesperson, who prints out their floor plan, and we start working from there."

Longford starts with plans by Las Vegas architect, Howard Perlman, who designs floor plans to include all the possible structural changes, and designs those changes. Longford offers more than 250 **options**. After customers make selections, the salesperson prices them out on the **options** pricing sheet for that plan and quickly gives them the final price on their home. On the 530 plan at Longford at Crystal Ridge, for example, which starts at \$118,000, buyers have several dozen **options**, including a master bedroom suite for \$9,250, a ceramic tile countertop in the kitchen for \$950, and a living room extension for \$3,480.

Because it can quickly customize and price, Murtagh says Longford's closing ratio is about 10 percent, more than three times the industry average of 3 percent.

"Several other builders have tried to copy us, but they have all stopped," says Murtagh. "The actual system is only part of the process. You also have to manage the permitting, the scheduling, the purchasing, and the building."

Longford does a lot of upfront work. The company has had every option appraised and priced, so when the customer's floor plan slides out of the salesperson's printer, everything is final. "Most builders do all this work after the customer signs the contract, but by then it's too late," says Murtagh.

"Once we start building, we will not change the house," says Murtagh. Subcontractors in Las Vegas make lump sum bids, so Longford knows the exact home price, including all the **options**, before construction starts. "That's where a lot of builders lose it, but we hit it right on."

#### GROW INTO EXPERTISE

Murtagh is quick to credit the team at Longford for the company's success.

"My management theory is to hire very good people from the start," says Murtagh. "They can do more with less when you're starting out, and they can help you grow. Our corporate controller, for example, used to work for a company that built roughly 800 homes. In the next few years, we are going to grow into her expertise."

All of Longford's employees participate in a profit-sharing program. Murtagh allocates 10 percent of annual profits to the pool, which is distributed based on salary.

#### REPRODUCE OURSELVES

Not content with his current success, Murtagh is expanding out of Las Vegas' entry-level market. Longford recently opened its first upscale project, Longford at Quail Creek, featuring 83 houses ranging from \$150,000 to \$200,000. Forty-one houses sold in the first two months after opening, and traffic counts average 200 a week.

"We're also exploring other markets," he says. "As insurance. Las Vegas is very competitive right now. Profits are about half of what they were two years ago." Murtagh's top two choices are Phoenix and Tucson. "We think there's a niche for us in those markets. We can reproduce ourselves there."

#### COMPANY PROFILE

Founded: 1991  
1994 units closed: 350 (est.)  
1994 gross revenue: \$36 million (est.)  
Market: Las Vegas  
Business activity: Land development, single-family semi-custom,  
attached semi-custom  
Number of employees: 44  
Average home price: \$112,000  
Average home size: 1,200 square feet  
Computer system: TOM system  
Marketing expense as percentage of gross revenues (excluding  
commissions): 2.5%

#### LOTS OF LUCK

Although he is looking to rapidly expand his company, John Murtagh isn't willing to pay the price to build in Summerlin, the fastest selling PUD in the country.

"We stay out of the master planned communities, because they're priced so high," he says. "They want \$145,000 an acre, but as an entry-level builder, I can't afford to pay much more than \$65,000 an acre."

Land at that price in Las Vegas would seem sure to attract a lot of builders, but Murtagh says he has never negotiated against other builders. "I'm a professional engineer," he says. "I know soils. Where another builder might see only problems, I can quantify the problems and design around them."

Then again, he may just be lucky. He recently picked up a 550-lot project for \$2,500 a lot. "It's nice," he says, "when you're the only builder who shows up at the sheriff's sale."

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COMPANY NAMES: **Longford Homes** of Nevada Inc.--Management  
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Former Coleman Executive to Open Experimental Home Development  
McKee, Jamie

Las Vegas Business Press (Las Vegas, NV, US), V9 N4 s1 p21

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TEXT:

When John Murtagh opens his **Longford Homes** sales office this week the local building community will be watching. Murtagh, formerly the division manager of Coleman Homes, is offering an affordable development that gives buyers a choice of 250 variations in five floorplans. Murtagh isn't building model homes--buyers will instead create their "custom" home on a computer screen.

Some builders say Murtagh's development won't go over with buyers because they expect models. Others admire the way he's put a new spin on housing **options** they always took for granted. Still others are wondering how he can bid production housing with so many variables.

Murtagh pointed out that he is saving approximately \$2000 per house by foregoing models, and affordability is what concerns his target market most. The main purpose of model homes, he added, is to beat the competition, and he is confident his development won't have any because homes are priced \$5000 to \$15,000 lower than other home developments in the Green Valley area.

He admitted his system builds on the usual standard **options** that builders offer. "To a degree, a lot of builders around town are doing it without knowing it," he said. "I'm just going two steps further."

As far as bidding complications, Murtagh said he'll bid out all the variations of **Longford Homes** at Paradise Valley ahead of time, so he'll know the costs. The changes might create more than the usual hassle for a subcontractor, but most are open to negotiations now that the market has slowed down, he said.

Murtagh, 38, began his homebuilding career as an assistant city engineer in Libertyville, Illinois. He headed Coleman's Las Vegas division for more than three years, but has had his own development company as a goal ever since he tried and failed in New Jersey five years ago. During the housing boom there, Murtagh remembers selling 300 homes in a weekend out of a sales trailer. Then the stock market crash hit and nothing sold.

Murtagh will start construction on the homes next month and expects the first closings in June. They will range from 776 square feet to more than 1600 square feet, and be priced from \$80,000 to \$110,000.

Market research was part of his job with Coleman. "I had to know what was going on, and it was obvious to me that there was a niche in the market that wasn't being answered and that was entry-level. The few builders that have addressed it are doing very well."

Longford Home buyers can design a one-bedroom or a five-bedroom home, with or without a den. They can opt for a one-car garage or a three-car garage on one of five computers projecting a three-dimensional view of the home's exterior and interior. Buyers will be given a hard copy of their

Design program  
choose floorplan  
options  
priced  
- financing options

final design. The computer even demonstrates mortgage **options** and sales transactions. "They can play 'what if?' games on interest rates and down payments," said Murtagh. Two sales associates will be on site to assist clients, though the systems are pretty self-explanatory, according to Murtagh.

"It's an experiment," said Murtagh. "It hasn't been proven here yet."

Murtagh purchased 32 acres of infill development land at the corner of Hacienda and Annie Oakley from Pardee Construction Co. of Nevada for his \$18-million experiment. Although the property is off the beaten track, it sits across from the highly regarded Bill Yonema Tomiyasu elementary school just north of Green Valley.

Though he wouldn't reveal the purchase price, Murtagh said it's a buyer's market today because many large builders are trying to reduce their land inventories.

"It's cheaper to build a house now than two years ago," said Murtagh. "In recessions there are a lot of opportunities that you wouldn't find in a boom market."

Financing is easier, too, said Murtagh, because the seller is willing to act as the bank and negotiate terms.

The homes at **Longford Homes** at Paradise Valley are all single-story because Longford's target markets are first time homebuyers with children and empty-nesters, he explained. "I'm trying to attract the buyer who doesn't know they can afford a house."

Early returns indicate Murtagh has tapped a market. His first ad, which ran in the sports section of the Review Journal on Super Bowl Sunday, produced 350 inquiries and 85 appointments. Not surprising, said Murtagh, citing the \$420 monthly payment of a Longford home on an ARM loan compared to the \$650 average for an apartment in Green Valley.

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NAMED PERSONS: Murtagh, John

SPECIAL FEATURE: Photo



*Services  
to Builders/  
contractors*

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09829603 SUPPLIER NUMBER: 17591576 (THIS IS THE FULL TEXT)  
Taking care of business - on the **Internet**. (home builders) (includes  
related articles) (Computer Connection)  
Farnsworth, Christina B.  
Professional Builder (1993), v60, n16, p48(11)  
Oct, 1995  
ISSN: 1072-0561 LANGUAGE: English RECORD TYPE: Fulltext; Abstract  
WORD COUNT: 5150 LINE COUNT: 00403

**ABSTRACT:** Home builders should take advantage of the marketing potential offered by the **Internet**. Forbes magazine states that businesses ignoring the net ultimately ignore their future. More than 50 US builders already have **on-line** brochures with home plans, maps, biographical information and easy response information. Linking to the **Internet** has been greatly simplified and builders not updated with the latest builder software can find several sources and resources within the information network.

**TEXT:**

You have your computer and your software -- word processing, accounting, estimating and job costing, and one of the CAD programs -- but for you to do business in the information age you need more. You need the **Internet**.

Don't worry though, if you are not up to-speed with the latest and greatest builder software, you will find sources and resources you need on the Net. Some of those resources include vendors that will help you get up to speed, such as BUILDSOFT, Computer Integrated Building (SolidBuilder) and Soft. Plan, which are included in the Computer Connection.

Why do you need to be on the Net? Because it's unbelievably easy. And very soon, if you are not **on-line**, you'll be missing an important current in the flow of information. According to Forbes magazine "any business that ignores cyberspace ignores the future..."

Already, more than 50 U.S. builders, from small custom home builders in Texas to a respectable number of Professional Builder's Housing's Giants, have **on-line** brochures with maps, home plans, biographical information and easy response information. Numerous international home-building firms are **on-line**, too. There are more than 100 **Real Estate** companies, many selling newly built homes on the **World Wide Web**. And the vendors, the people you buy from are going **on line** just as fast as they can. They include computer software companies, architects and plan services. Building products already **on-line** include major appliance corporations, central vacuum cleaning systems, HVAC systems, locks, plumbing products, kitchen cabinets, custom wine cellars, fireplaces, windows and doors, and carpet companies. Even some of the lumber yards in places like Washington state have sites on the Net.

Who's looking at this information? A lot of people. For example, between August 1st and the 21st, nearly 1300 **Internet** surfers visited the Centex Web site. SoftPlan had 700 hits in two weeks.

It's easy because technology and software have finally created an arena that truly is "point and click." The cost of hardware has plummeted -- a new multimedia Pentium PC with a CD-ROM, built-in speakers, a fast modem and Fax board, useful built-in software, and a gigabyte of storage (that's a lot) -- can be purchased at stores like Walmart for less than \$2000.00. That's less than half the price that computers without as much storage capacity, CD-ROM's or software cost just a year ago.

You might even want to think about adding one of these new PC's to your business, especially if you are already using CAD software to design your projects. In fact, you may be able to speed your home-building

customers' materials selections by letting them surf the Net to outfit their new homes.

The convenience of "all-in-one PCs" has brought hundreds (soon millions) of new users **on-line**. Any adult can "plug and play" with their new PC. The new computer user simply takes his or her PC out of the box, plugs in the color-coordinated plugs, turns on the machine, and logs-in **on-line** to a service as part of the hardware warranty registration process. Immediately, he or she can start surfing the Net. Computer users can **choose** one of the providers that bundles its software with the computer, such as Prodigy, CompuServe (the home of NAHB's **on-line** information), America On-Line, or the newly released Microsoft Network. Whatever the provider, **Internet** access is just a "click" away.

Most major-brand computers with Windows purchased after June 24th of this year, are eligible to receive Windows 95. upgrade which includes. access to the Microsoft. Network and the **Internet**. There are already 100 million Windows users, said. Bill Gates at his Launch. 95. Of course, he expects many of those folks to. upgrade as well.

In August, after the. monthly minimum fee. (usually for three hours of use), **on-line** time cost about \$3.00 an hour (about half the rate of the least expensive long-distance telephone). There are commercial services in most markets that allow you to "register your domain" and provide 150 hours of **Internet** access for about \$40 a month. In some areas around the country, services have begun to provide unlimited **Internet** access for about \$18.00 a month. Experts expect rates to drop as competition increases.

Computer users can also enroll at their local junior college and get **on line** as part of tuition, or perhaps, as in Tucson, Ariz., they can subscribe to the local paper's service Tucson's is called StarNet, the electronic version of the Arizona Daily Star. For a flat fee of \$20.00 a month (for personal users), subscribers receive the daily paper and unlimited **Internet** access.

Even if you think that there are not enough people with **Internet** access, and your own **on-line** presence is still a bit premature, remember that nearly every community college or university student has an **on-line**. account. These students are tomorrow's home buyers. Moreover, many. experts predict that Windows 95 will rapidly bring 10 to 20 million people **on-line**. Paul Colton, MiNet **Internet** Publishing, San Diego, says the **Internet** is growing at a rate of 20 percent every month.

Most of the new growth is on the **World Wide Web**. Why? Because everyone with **Internet** access can see sites on the Web. Magazines and companies tied in with service providers such as CompuServe or America OnLine can only be seen by subscribers to that particular service. To see the NAHB pages, for example, you must be a subscriber to Compu-Serve.

The rush to get **on-line** is real. Even Price Costco, the big warehouse merchandiser, has a "Home Pagen on the Net. Your television and radio stations probably have sites on the "**World Wide Web**." Magazines and newspapers are also rushing to get sites. The creation of new access software such as Netscape and the ease of use for the newer search programs (also called in computerese "search engines") has made getting **on-line** and searching for information, a lot easier than using the public library.

For example, you can click onto a search program called Yahoo and type in the words "**real estate** listings."Yahoo's will quickly show you 100 of the 105 possible entries found in their database (typing in more information would frame the search to access those not shown). Because, entries are cross-referenced in categories, there is some duplication. And t he search is worldwide. Similarly, "home builders" presently yields "19 matches" on Yahoo, which includes an index called "The Home Builders Utopia."

A click of the mouse brought up "The Home Builders Utopia: The Guide to the Professional Home Builders on the **Internet**" site. It has

listings for more than 50 U.S. builders as well as builders in Canada, Australia, South Africa and India. The Home Builders Utopia is also the index on which to access the Toronto Home Builders Association. Builders from Centex to K. Hovnanian Homes are on the Web as well as smaller companies such as Timbergreen Custom Homes, Dallas and The McAdams Company, Kirkland, Wa. McAdams does remodeling, design and restoration.

In fact, the HomeBuilders Utopia proves that you don't need to be a huge company to be a force on the Net. Tom Greico of Timbergreen Custom Homes, Dallas, is also on The Home Builders Utopia and "The Home Builders' Presence Provider." Through a local service provider he has his own Web site end' through his Utopia index, "hot links" to other builders on the Web.

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Craig Turpin, Special Projects Director for the Tucson, Arizona, -based Homes Illustrated provides **Internet** access as a service to home builders and Realtors who advertise in the Homes Illustrated magazines. Homes Illustrated has two dozen publications in seven states serving 17 cities.

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likes the fact that InterArt has other home-related areas for visitors to browse. Not everyone who buys a home is looking for one, she says. About 25 percent of her business already comes from people who didn't know they were going to buy. And once they do buy, the site is a resource for home accessories which adds to the perceived value of Pressley's services -- the famous trickle-down effect on the economy made from purchasing a home.

To put your firm **on-line**, you need to be able not only to make up the pages of information (which requires special html coding--html stands for "hypertext mark-up language"), but also to distribute them. When people call your site, they want to get on promptly (no busy signals) and access information quickly (pictures should show up fast). So most sites are using providers that have fast servers large-enough to service visitors. InterArt describes itself as an umbrella organization established to promote the Southwest. Other sites it hosts **on-line** include fine arts, artifacts, rugs, furniture, gifts, food, hotels, restaurants, regional activities as well as **real estate**. And no matter which site you come in on, you can get to any other. From homes it's a simple click to look at rugs.

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Access to the Net is not expensive. Companies such as MiNet charge annual fees ranging from \$200.00 for a personal user to \$1800.00 for 50 megabytes of information with secure credit card access (so users can buy merchandise using their credit card in a secure fashion). A typical 10 megabyte commercial space costs \$600.00 a year and includes advertising on up to five of the search indexes such as Yahoo and InfoSeek. MiNet will scan your images for \$10 per scan. Graphic design and programming cost \$75.00 per hour each. Each page on the Net costs averages \$75.00 to prepare, Colton says.

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Other systems appeared to be very involved and were focused on commercial and engineering applications that don't apply to residential design," Garnett says.

He rapidly discovered that all of the detail of his hand-drawings could be quickly and easily accomplished using SoftPlan, partly because it draws with objects such as walls and windows rather than lines. His productivity increased. "My work is actually more creative because changing it is so easy with the click of a mouse. The library of existing symbols is comprehensive, and it is easy to create new symbols." Garnett uses a lot of rich Victorian and turn-of-the-century detail on his homes.

Garnett has also been impressed with SoftPlan's responsiveness. They are very open to comments and suggestions which often appear in software upgrades.

Visit SoftPlan on the **World Wide Web** at: <http://www.softplan.com/web-soft> or email to [websoft@usit.com](mailto:websoft@usit.com)

**RELATED ARTICLE: SolidBuilder's 3-D Drawings Help Remodeler Win Jobs**  
Most homeowners don't have a clue as to what they are looking at when they see a set of plans," says Chuck Owings, Short Hill Design & Construction Ltd., Purcellville, Va.

Owings, president of the design/build firm, chose SolidBuilder about two years ago because of its ability to easily provide 3-D CAD drawings. Prospective clients can really see just how their project will look when complete before a single wall is demolished. The bulk of Owings business is remodeling combined with several one-of-a-kind custom homes a year. 3-D CAD also gives Owings an edge over his largely 2-D competition.

If Owings is designing a kitchen, he can literally show the homeowner the view from the kitchen sink or looking over the counter into the family room.

Owings also uses the software's three-dimensional capabilities to show a customer what they really want. For example, a client might think they need a room to be 10 feet longer. Using Solid-Builder 3-D model and drawing in furniture, Owings can show them how four-feet may serve them just as well and cost less. There is a complete 1800-piece library of both building and furnishing symbols.

But helping clients envision projects isn't the sole reason to **choose** SolidBuilder. The program also produces a complete list of materials and a bidding list. In remodeling, where every job is different, those features are a significant way to control costs.

SolidBuilder's 3 D model even keeps track of three distinct areas of renovations: new sections to be built, what is to be changed and what is existing and not going to be changed. Those parts of the house that are not changed are listed as "other," will appear as dotted lines on the plans, and will not be estimated by the program. Using a database of labor and materials for the other two categories clarifies bidding, ordering and construction.

For more information about SolidBuilder call 1-800-294-3757 or look for their new site on the **World Wide Web**.

**RELATED ARTICLE: Evolution Computing Announces The Release Of EasyCAD(R) For Windows(R)**

Evolution Computing is excited to announce our grand entrance into the windows environment with EasyCAD(R) for Windows(R), a very powerful, low cost windows CAD application.

Our newest product takes the Windows experience one step further. No longer will the power of EasyCAD be limited to the DOS environment. With EasyCAD for Windows the user has the ability to use all applications in Windows--TRUE TYPE FONTS, VECTOR FONTS, FAX/MODEM systems, CLIP BOARD, **ON-LINE MANUAL**, DIALOG BOXES, PORTRAIT and LANDSCAPE print **options**, PRINT PREVIEW, and more!

New features make it easier to design--layers, views and styles can be named with descriptive comments, metric line styles are available and line weights are variable so the user can attach different line thickness to the style of any entity. User-definable named grids, polar grids and icons are accessible in the middle of a drawing command for views, styles and layers. Many of EasyCAD for Windows commands are nested for multiple

literally, inviting "Big Brother" into your home or place of business. However, Big Brother may be less troublesome than "Little Brothers." Tales of evil hackers snooping and computer viruses (popularized by such movies as "The Net") are overblown, but the occasional nasty incident is bound to occur. Why invite trouble? Keep your business computing and your **Internet** computing on separate PCs.

RELATED ARTICLE: BUILDSOFT Creates an **On-Line** Builder Community

Every event in a builder's life is going to involve the **Internet**," says John Price, **On-Line** Products National Sales Manager for BUILDSOFT.

BUILDSOFT, located in the Research Triangle Park region of North Carolina already works with some of the newest of technologies. They were the first vendor to provide Windows based fully integrated construction management and accounting software for residential homebuilders. BUILDSOFT also developed FieldPen, a revolutionary software program that runs on a PDA in the field to streamline on-site computing by reducing paperwork and eliminating errors. The company is even a Microsoft Solutions Provider.

Now, BUILDSOFT is branching out in cyberspace.

BUILDSOFT is now also an **On-Line** service provider. Currently offering information in a Web page format, BUILDSOFT has something for both prospects and existing users. For those new to BUILDSOFT, the Web page provides company history and philosophy, software reviews and articles, FAQs (frequently asked questions), schedules of upcoming tradeshow, detailed product information and special promotions.

For existing users, BUILDSOFT's Web page offers company newsletters, seminar training dates and locations, technical FAQs, news about BUILDSOFT software upgrades, and links to related product's support Web sites. The page also offers BUILDSOFT Peer Groups a voice. Explaining its mission, exchanging ideas and giving Peer Group members a Web page of their own.

But that is not all BUILDSOFT is doing. "We have never been afraid to be on the cutting edge," Price says.

"We have an **Internet** plan that goes beyond the **World Wide Web**" he says about an **on-line** service in planning for the past 12 months.

BUILDSOFT envisions a community of builders, architects, vendors, manufacturers, Associations, Building Officials, magazines and even clients. They call this community BUILDNET, a place where it's neighbors will be able to view and download plans, order building and construction products, find out how weather forecasts will affect their schedule, work out finance terms and even process job draws.

Tools like FieldPen will even become BUILDNET enabled. New technology will allow FieldPen (which presently uses PC cards to transfer information between PDA and computer) to network with main-office computers over the air-waves through wireless technology similar to that used on cellular phones.

"BUILDNET is building information at the speed of light," says Price. BUILDSOFT's Cyberspace address is accessible through any **Internet** service provider: <http://www.BUILDSOFT.com>.

RELATED ARTICLE: Computer-Aided Design Adds Creativity and Speed to Luxury Home Design

Certified Professional Designer Larry Garnett, Larry W. Garnett & Associates, Inc., Pasadena, Texas, specializes in custom and luxury home design. He is one of the premier designers selling luxury home plans through magazines such as Home and Professional Builder.

Garnett was reluctant to use CAD and spent years looking at software before converting to the computer and architectural design software. He liked drawing by hand and thought it was integral to the design process and spurred his creativity. He feared computer design would limit creativity. And he had heard horror stories about how long it took to learn the programs.

"My fears were unwarranted; I found exactly the opposite of what I had expected," Garnett says. "SoftPlan completely alleviated my fears."

"I was drawn to SoftPlan because of its focus on residential design."



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Potential buyers can stay home to house hunt  
Campos, Frellie  
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TEXT:

With the soft residential **real estate** market slowly improving, many companies are still trying to increase the number of potential home buyers by expanding their marketing strategies by going **online**.

Castle & Cooke Homes Hawaii introduced a Web site for potential home buyers to expand marketing for its master-planned communities and residential developments.

Customers will now be able to concentrate on the types of homes and price ranges that meet their specific needs and have a good foundation in the overall home-buying process before actually visiting models, said Harry Saunders, Castle & Cooke Homes Hawaii vice president of sales and marketing.

In addition to that, potential buyers will have the opportunity to review models, **floor plans** and other information.

The company's Web site, <http://www.castle-cooke.com>, is the only commercial **Internet** site in Hawaii that relies on Quicktime VR, which enables a viewer to visually enter any room in a selected new home model and pan the screen 360 degrees around the room in a video-like fashion.

Viewers can also tip the image up or down to view the ceilings and floors and zoom in for closer looks at any feature they **choose**.

An average of four people a week have visited Castle & Cooke Home's Lalea at Hawaii Kai, a residential condominium development after first reviewing the site on the **Internet**, according to Craig Carapelho, account executive for the developer's advertising agency, The Schiller Group Ltd. The site was first available in July of last year.

In addition to the Web site, Castle & Cooke Homes Hawaii plans to compress home-buying information on CD-ROM to mail out in place of a brochure.

It's a reinforcement tool that's much more effective and costs the same as sending out a brochure, said Carapelho, who added that the average cost to duplicate one CD-ROM is \$5.

"Potential buyers can view their dream home and also show their family and friends without actually visiting to the site. It's a time-saver," Carapelho said.

Besides viewing new homes and investigating loan opportunities, viewers can review all developer **options** and upgrades available. Prospective buyers can then **select** the upgrades they want and see how these added costs may affect their pre-loan qualification.

/ options

"This was a big investment up front, but we're getting a lot of use out

of it," Carapelho said, declining to comment the actual costs.

Like Castle & Cooke Homes Hawaii, more Hawaii-based companies and organizations are using the **Internet** to expand their businesses, such as the Honolulu Board of Realtors.

The board's site receives over 350 hits per week. It features 99 percent of all Multiple Listing Service listings, mortgage rates for more than 50 Hawaii lenders, consumer information on **real estate** transactions, housing statistics, and general information about the Honolulu Board of Realtors.

Future features will include commercial and rental properties, open houses, and community and relocation information.

Visitors can target properties according to whether they are single-family homes or condominiums, price range, and minimum number of bedrooms and bathrooms. Small color photos with brief descriptions of the properties meeting the search criteria will also be displayed.

More **real estate** professionals are already reporting inquiries from local and international parties interested in buying properties in Hawaii since the site debuted in May 1996. The site, called Hawaii **Real Estate** Central, can be found at <http://www.hbr.com>

Schuler Homes Inc. has also jumped on the **Internet** bandwagon by introducing its Web site at <http://www.planethawaii.com/schuler>.

The company hopes to target those who are seriously looking to buy a home instead of those just "browsing the Web," said Joy Brookhouse, marketing coordinator.

According to a report by the Honolulu Board of Realtors, typical **Internet** users have a graduate or professional degree and earn an annual household income of \$50,000 to \$80,000.

"We hope to be reaching out to a group of people who are interested in buying, and the inquiries we've received seem to be interested," Brookhouse said.

According to Eric Grosso of DiGuilio Advertising, designing an average Web page without added gimmicks such as video, averages from \$2500 to \$7,000.

"It's always best to meet with a **real estate** agent face to face, but having a buyer go **online** is also the next best thing. It's another tool to get them to come down to the model homes," Carapelho said.  
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COMPANY NAMES: Castle & Cooke Homes Inc, Honolulu, HI, US, SIC:6552;1521,  
Ticker:CKI

CLASSIFICATION CODES: 8360 (Real estate); 7000 (Marketing); 5200  
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DESCRIPTORS: **Real estate** sales; Housing; Market strategy;  
**Online** information services; Web sites

online design  
option choice

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02332775 SUPPLIER NUMBER: 55521204 (THIS IS THE FULL TEXT)  
RFP Marketing Opportunities Abound At 'Design Your Dream House' Site.  
Internet World, 5, 26, 66  
August 15, 1999  
ISSN: 1097-8291 LANGUAGE: English RECORD TYPE: Fulltext  
WORD COUNT: 1759 LINE COUNT: 00144

#### TEXT:

Our company, a major West Coast **real estate** firm, developed software several years ago to help high-end customers design, price, and collect bids on custom homes. The idea never took off the way we had intended, but we believe some of the concepts from that project--and hopefully some of the actual software--can be adapted to serve an even bigger market on the **Internet**.

#### The Problem

Our idea is to create a "Design Your Dream House" Web site that allows consumers to start with one of several basic designs, change **options** within the design constraints specified by the program, and match the house to the topography of available lots. Our existing software produces a fairly realistic architectural design rendering that's sufficient for soliciting initial bids. When this process results in a real homebuilding contract, we will collect a commission. However, because we don't get paid at all unless there is a sale, our incentive will be to assist the customer in finding the low bid that will convince him or her to follow this process through to a contract.

online house  
design - options

Collect commission

We need help adapting a Win32 user interface to the Web architecture. We own the Visual Basic code that drives the wizards for selecting a home design, but the visual representations for those designs are provided by third-party COM components. A major question is whether we can expect to migrate any significant fraction of this system to a Windows-based server and reuse it in a Web context, or whether we must migrate to another platform. We have retained three of the original developers, one of whom has some experience with C++ programming for Unix in addition to his VB skills.

We also need to decide the best way to preserve capabilities such as drag-and-drop in a Web context without excluding too many users who don't have the latest and greatest browser. Because users may work on their home designs a little at a time over a period of weeks or months, they will need to be able to save their work and retrieve it during a later session.

#### The Response

Gr8

#### METHODOLOGY

What would your approach be to getting more detail on this problem and devising a solution?

Gr8 begins with an assessment phase. The assessment, conducted from marketing, design, and technology perspectives, comprises interviews, research, and a review of the current state of the project. We work with the client to develop a system that meets the client's specific business needs.

The assessment yields a requirements-and-specifications road map on which to base the direction of the project. With a clear understanding of the project's scope, we can **select** the best platform and build in the scalability that will be necessary as the firm's needs grow.

Gr8 will review all of the business opportunities available to the client through this Web project. For example, will only the firm's own clients and agents be allowed to use the site, or will it be a tool for clients of several property development companies, in which case it can serve as a marketing and branding vehicle? Can we improve on the commission structure of the site to generate more profit for the firm by developing an

affiliate program with contractors and other **real estate** companies? Would the firm like to tie the site into its internal communications structure?

The marketing team will assess, define, and prioritize audiences for this initiative. After the audiences are defined, Gr8 will determine the voice of the firm in order to begin creating resonant language for the site.

Gr8 will also assess the need for collateral materials (brochures, ads, etc.) to help in reaching the firm's target audiences. We will discuss launch strategy and will integrate the marketing for the site into the firm's other marketing and promotional campaigns.

The marketing team will discuss the relative benefits of using data generated by the project to build personal relationships and dialogue with prospective homeowners and builders vs. using it for aggregate consumer research. Gr8 will also show the firm how to collect user data that is useful for assessing and improving the effectiveness of the site.

From a technical perspective, Gr8 will assess the development of databases that will allow user queries to pull from multiple databases (topography, **floor plans**, contractors, etc.), as well as the challenges of maintaining the current usability features (such as drag-and-drop) of the current site. We will also address the technical requirements for the business solutions suggested by the marketing and business development teams.

A visual assessment of the site determines whether the site will follow the look-and-feel of the current site or will be redesigned for audiences defined by Gr8. Gr8 will develop a budget for imagery and visual design, as well as determine which pages can be templated and which require original design. The design assessment team will also recommend the most effective ways to integrate collateral marketing materials with the look-and-feel of the site.

Gr8's marketing and public relations team will discuss the efforts necessary to launch the site and determine whether Gr8 will launch the site for the firm or provide resources for the firm to launch the site itself. This same team will also outline a communications plan designed to generate dialogue with the site's audiences and visitors, as well as with the media, to help ensure long-term success.

An administrative review will consider the ability of the firm's staff to perform updates to the site. The review will also look at reporting systems, customer service, and an administrative system for automating the maintenance of the site and the posting of content.

During the assessment we:

- \* Interview management and potential users
- \* Identify audiences
- \* Review business processes
- \* Evaluate composition of the proposed site
- \* Review information types and applications
- \* Assess administrative requirements
- \* Evaluate infrastructure
- \* Recommend an operational foundation

What the assessment yields:

- \* Content map
- \* High-level site architecture
- \* Design, marketing, technology, and administration recommendations
- \* Project budget
- \* Schedule

USER INTERFACE/USABILITY

Describe the process you would follow to make this application attractive and usable on the Web.

Our vision for the "Design Your Dream House" project is to provide an interactive display that allows users to engage in the home development experience. Users will immediately see the results of their choices in a frill-color, real-time display that allows them to tour their new home.

The interface will be user-centric, with simple and visually oriented navigation. Content architecture will provide intuitive movement throughout

the application. The mode of interaction will be point-and-click, with a clear set of choices being presented at every step.

Gr8 believes it is important for the firm to retain knowledge of the site's visitors. As users navigate the site, information will be captured regarding their preferences and style. The site will then be able to make recommendations to them as they move through the interface.

Gr8 believes the greatest usability and scalability will exist in a combination of **Internet**, extranet, and intranet. We recommend designing the **Internet** portion for the end user (the future homeowner) to build a dream house. The extranet can collect queries and data from the **Internet** and provide a confidential forum where contractors can bid on projects. The intranet can offer all the information and provide a confidential area for **real estate** agents to discuss new properties and bids, and to view data collected on site users.

#### RECOMMENDED ARCHITECTURE

Describe the technologies and products (or a process for selecting them) that would be appropriate for this project.

Most of the information needed to recommend specific technologies and products is gathered during the assessment phase. When recommending technologies, Gr8 structures the site to accommodate multiple browsers and connection speeds. We design our sites to be usable by the lowest common denominator, and we then build in additional tools and features that can be used by those with more sophisticated equipment but do not interfere with the viewing experience of users with slow connections or older browsers.

#### TRACK RECORD

Describe similar projects you have completed.

Gr8 has constructed several sites that combine voice recordings, videos, and data manipulation. These sites let users interact **online** with much the same tactility and conversational ability they'd enjoy if they were physically present at our clients' locations.

Gr8 undertook a similar project for the National Gallery of Art. We constructed an **online floor plan** and tour route for several exhibits. Using Zoom technology, we were able to give **online** tours of the NGA and allow users to navigate the gallery themselves, view exhibits in extraordinary detail, and even examine individual brushstrokes in the artwork.

Gr8 also developed a user-centric application for the Packaging Machinery Manufacturers Institute, showcasing PMMI's trade show. Users can book travel reservations as well as set appointments **online** with personnel from their client base. The application also builds a custom list of exhibitors and dynamically generates a map with the user's selected exhibitors highlighted.

#### STAFFING

Describe the composition of the team you would assign to this project. Would you subcontract portions to other firms?

Gr8 will assign a dedicated core team of six to eight consultants, plus another six to eight people who will be called on as needed. The marketing team will include a marketing director, a researcher, an information architect, and a content developer. The design team will include a creative director, an art director, a designer, and a production artist. The technology team will include a technology director, as well as programmers and testers. An account manager and a project manager will act as liaisons between the teams and the client firm.

#### PRICING

Explain how you would charge for a project of this sort. Be as specific as possible, given this information.

Based on the information provided, Gr8 would charge about \$30,000 for an initial assessment. Once the scope of the project is determined, we provide three **options** for our dents: They can work with Cr8 on a project-by-project basis, on a time-and-materials basis, or on a monthly or annual retainer basis.

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